Obtaining CERES Data Products and User Help

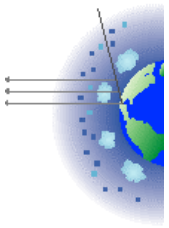
James Koziana

Atmospheric Sciences Data Center (ASDC)

January 29-30, 2003

CERES Data Products Workshop
Norfolk, VA

User Services: larc@eos.nasa.gov
Web site: http://eosweb.larc.nasa.gov

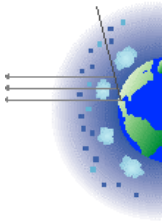


- Atmospheric
- Sciences
- Data Center

Processing, archiving, and distributing Earth Science data at the NASA Langley Research Center

Topics

- **Overview of ASDC**
- **Access to CERES Data Information**
- **Search and Order**
- **Subsetting CERES Data**
- **Visualization and Analysis Software**



Atmospheric Sciences Data Center (ASDC)

- A full service data center for the **production**, **archival**, and **distribution** of Earth Science data in support of NASA's Earth Observing System (EOS)
- Supports science disciplines:
  - Radiation Budget
  - Aerosols
  - Clouds
  - Tropospheric Chemistry
- Operations began in ***January 1993.***
- Currently supports over 30 science projects (teams) with over 300 data sets.
- In FY01, 5,347 Customers representing all 50 US states and 124 other countries
- Current archival system volume: **358 TB.**

Projects

Projects include:

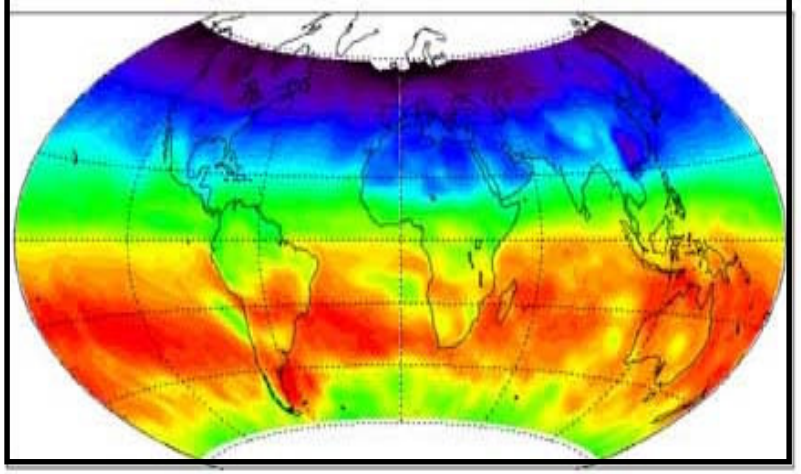
- ***TRMM/Terra/Aqua Experiments:*** **CERES, MISR and MOPITT**

- ***Satellite Data:*** **ERBE, LITE, MAPS, POAM, SAGE**

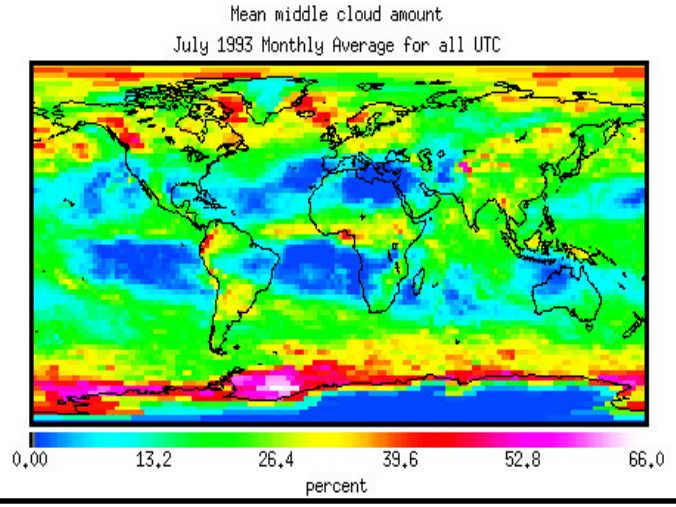
- ***Field Experiments:*** **FIRE, GTE, LASE**

- ***Specialized Data Sets:*** **ISCCP, SRB, SSE**

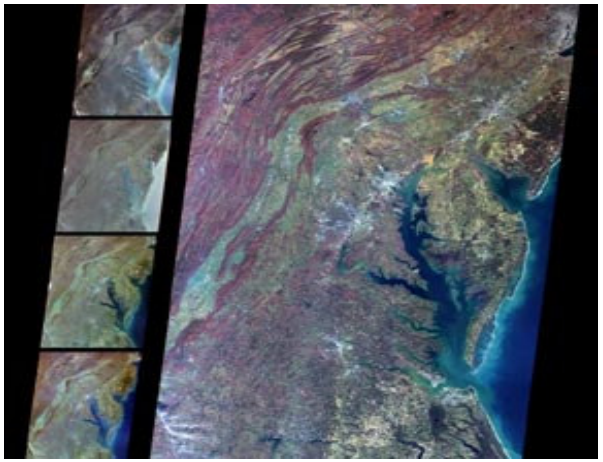
CERES



ISSCP D2 Monthly Data Product



MISR

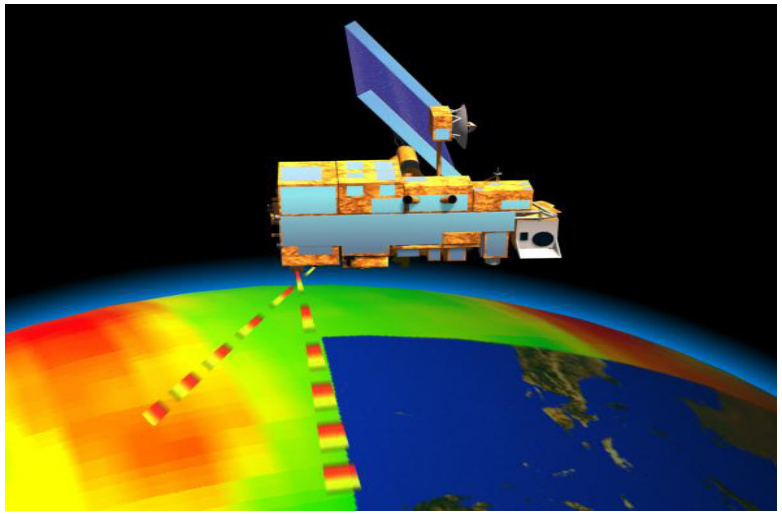


Clouds and The Earth's Radiant Energy System (CERES)

TRMM (1 scanner-***PFM1***) launch November 1997

Terra [EOS-AM] (2 scanners ***FM1 and FM2***), 10:30 a.m. sun-synchronous orbit, December 18, 1999.

Aqua [EOS-PM] (2 scanners ***FM3 and FM4***), 1:30 p.m. sun-synchronous orbit, EOS Aqua on May 4, 2002.



Orbits:

Terra: 705 km altitude, 10:30 a.m. descending node sun-synchronous, near-polar

Aqua: 705 km altitude, 1:30 p.m. ascending node, sun-synchronous, near-polar

TRMM:350 km altitude, 35° inclination

Spectral Channels:

- Solar Reflected Radiation (Shortwave): 0.3 - 5.0 µm
- Earth Emitted Thermal Radiation Window: 8 – 12 µm
- Total: 0.3 to > 100 µm

Swath Dimensions: Limb to limb

Angular Sampling: Spatial Resolution: 20 km at nadir (10 km for TRMM)

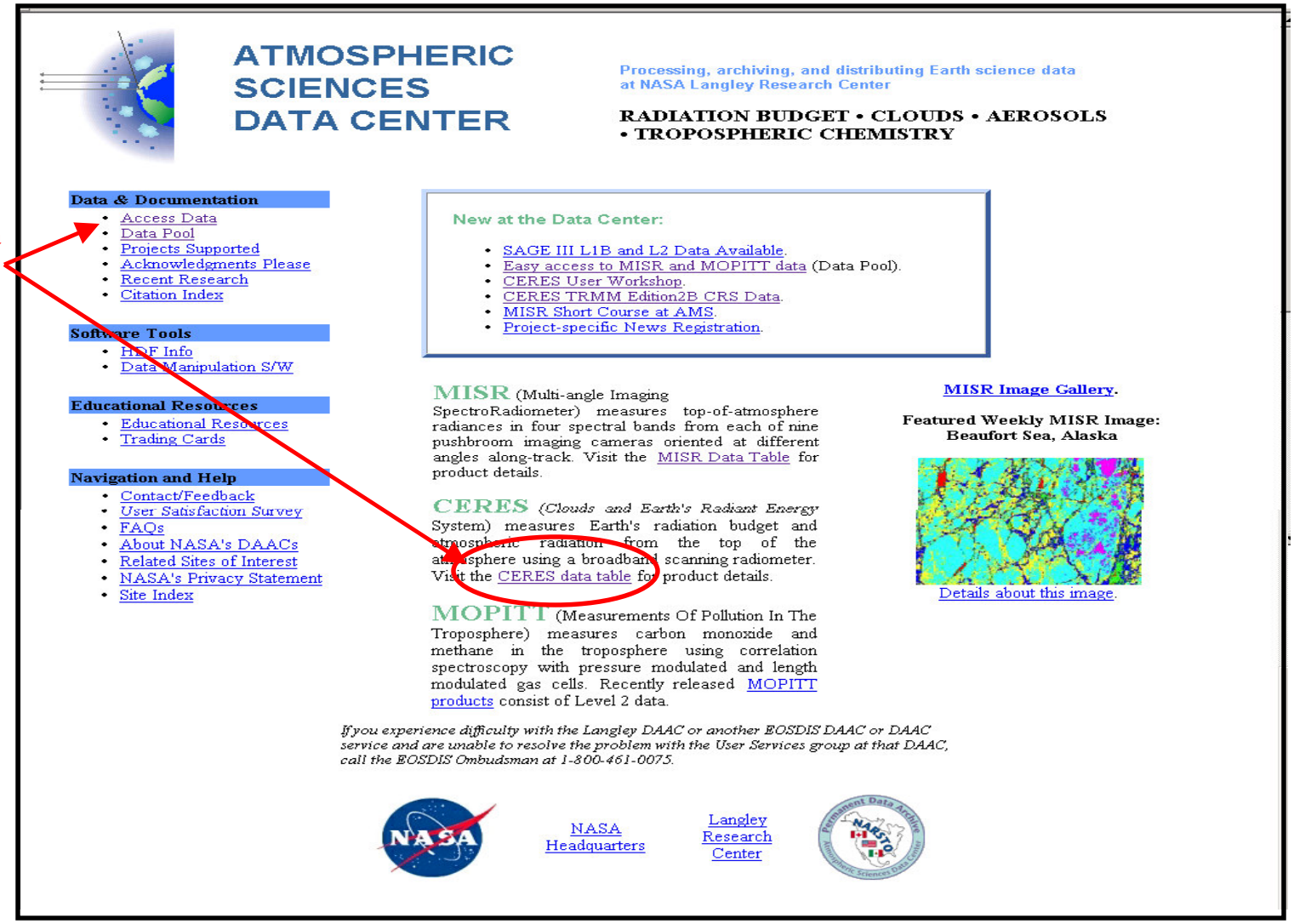
CERES Primary Archival Products

	Product Codes CERES	Name	Frequency	Size, mb	Key Parameters
	BDS	Bi-directional Scans (1B)	1/Day	845	Geolocated and calibrated filtered radiances for Total, SW and WN
	ES8	ERBE-like Instantaneous TOA Estimates (2)	1/Day	480	ERBE-like instantaneous unfiltered radiances and fluxes
	ES9	ERBE-like Monthly Regional Averages (3)	1/Month	1099	Instantaneous regional gridded mean and monthly regional mean ERBE-like TOA fluxes
	ES4	ERBE-Like Monthly Geographical Averages (3)	1/Month	27	Monthly mean regional, zonal and global mean ERBE-like TOA fluxes
	SSF	Single Scanner Footprint TOA/Surface Fluxes and Clouds (2)	1/Hour	258	Instantaneous TOA radiances, TOA and surface fluxes and cloud properties
	CRS	Clouds and Radiative Flux (2)	1/Hour	354	Instantaneous surface, atmospheric and TOA fluxes
	SYN	Synoptic Radiative Fluxes and Clouds (3)	1/3-Hours	1920	Regional LW, SW and WN fluxes for the surface, atmospheric layers and TOA and cloud properties
	FSW	Monthly Gridded Radiative Fluxes and Clouds (3)	1/Month	20,349	Gridded surface, Atmospheric layers and TOA fluxes and cloud properties
	SFC	Monthly Grided TOA/Surface Fluxes and Clouds (3)	1/Month	11,069	Instantaneous regional gridded mean TOA radiances, TOA and surface fluxes and cloud properties
	AVG	Monthly Regional Radiative Fluxes and Clouds (3)	1/Month	1189	Averaged surface, atmospheric layers and TOA fluxes and cloud properties
	ZAVG	Monthly Zonal and Global Radiative Fluxes and Clouds (3)	1/Month	3.3	Averaged surface, atmospheric layers and TOA fluxes and cloud properties
	SRBAVG	Monthly TOA/Surface Averages (3)	1/Month	4722	Monthly regional mean TOA radiances, TOA and surface fluxes and cloud properties

Web Site: http://eosweb.larc.nasa.gov

User Services: larc@eos.nasa.gov

CERES Data Table



CERES Data Sets

The Clouds and the Earth's Radiant Energy System (CERES) is a key component of the Earth Observing System (EOS) program. The CERES instrument provides radiometric measurements of the Earth's atmosphere from three broadband channels. The CERES instruments are improved models of the Earth Radiation Budget Experiment (ERBE) scanner instruments, which operated from 1984 through 1990 on NASA's Earth Radiation Budget Satellite (ERBS) and on NOAA's operational weather satellites NOAA-9 and NOAA-10.

The first CERES instrument was launched from Tanegashima, Japan, on November 27, 1997, as part of the Tropical Rainfall Measuring Mission (TRMM). Two CERES instruments were launched into polar orbit on board the EOS flagship *Terra* on December 18, 1999, and two additional CERES instruments were launched on board EOS *Aqua* on May 4, 2002.

Note that these data sets are affected by CERES Operations in Orbit.

CERES News

Join our Mailing list for CERES News!

CERES User Workshop - **January 29-30, 2003, at the Airport Hilton in Norfolk, VA.**

Order CERES Data via the Langley Web Ordering Tool.

Documents Tools Links

Documentation	Data Manipulation Tools	Relevant Links	Images
CERES Data Products Catalog Page. CERES Collection Guides.	view_hdf Tool.	CERES Home Page. CERES Brochure (PDF). CERES Terra Home Page. CERES TRMM Home Page. CERES ARM Validation Experiment. CERES/ARM/GEWEX Experiment. CERES/ARM Radiation Experiment. CERES Surface Properties.	Earth Outgoing Longwave Radiation from CERES Instrument on Terra (03/01/2000 - 02/28/2001) Data Animation. 9 Mbytes. 15 Mbytes. Browse Products: ES-8 and ES-4 Browse Products.

The CERES data are written in the HDF format. The sample read software packages that are provided with the data are able to read the HDF format. However, you will need to obtain the HDF libraries. (Get information on the HDF libraries.)

If you are interested in ordering any of these data products, select the data set name, and this link will take you directly into the ordering system for you to place your order via the Java Version of the Langley Web Ordering Tool. By using this tool, you are able to subset the following data products, CRS, ES-8 and SSF, by parameter.

Products

Currently available data sets: BDS | CRS | ES-4 | ES-8 | ES-9 | FSW | SFC | SRBAVG | SSF

BiDirectional Scan (BDS)

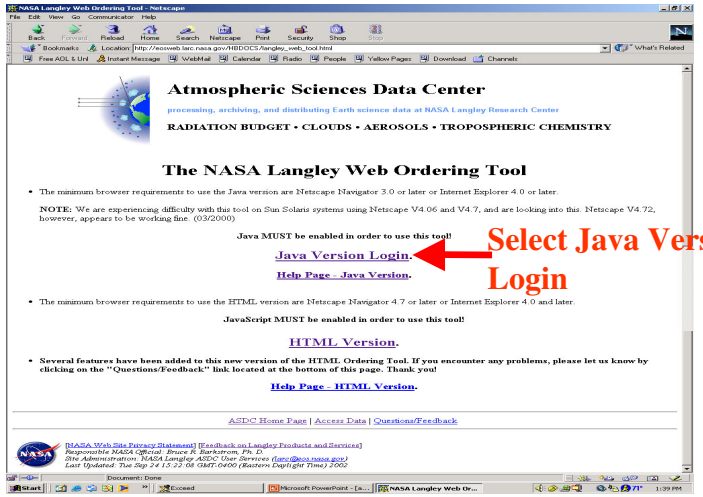
Parameters: Instr. Engineering Parameters, Shortwave Detector, SW Filtered Radiance, Total Detector, TOT Filtered Radiance, Window Detector, WN Filtered Radiance

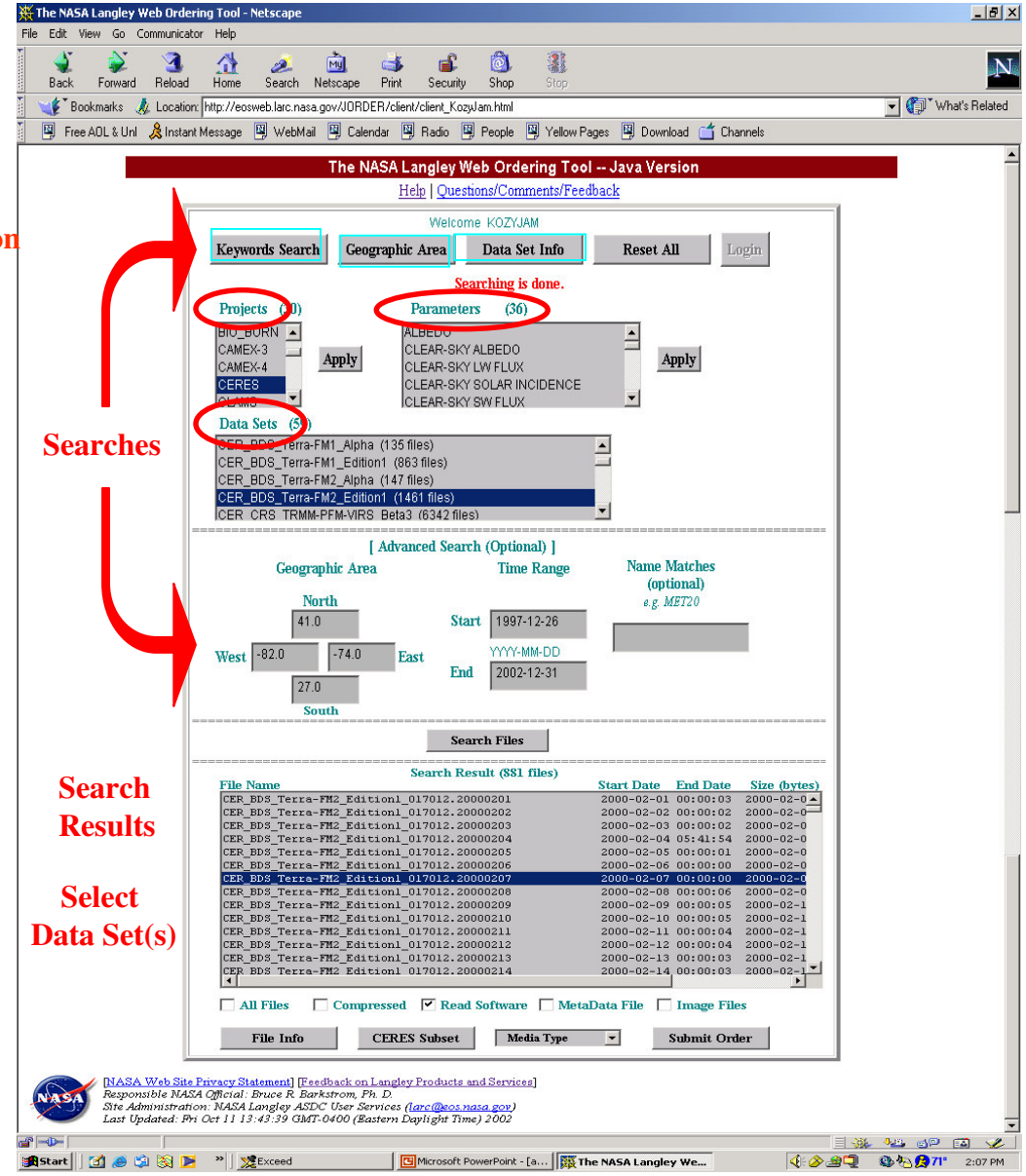
Easy Ordering

Spacecraft	Data Set Name	Guide Document	Sample Software	Temporal Coverage
	CERES_Test_BDS	Description.	Readme | Read Package (C).	01/05/1998 (Daily)
TRMM	CER_BDS_TRMM-PFM_Edition1. Quality Summary.	Description/Abstract | BDS Collection Guide. (PDF)	Readme | Read Package (C).	12/27/1997 - 08/31/1998 (Daily)
Terra	CER_BDS_Terra-FM1_Edition2. CER_BDS_Terra-FM2_Edition2. Quality Summary.		Readme | Read Package (C).	01/11/2000 - Current Production (Daily) NOTE: The instrument covers were opened on 02/24/2000.
	CER_BDS_Terra-FM1_Edition1. CER_BDS_Terra-FM2_Edition1. Quality Summary.		Readme | Read Package (C).	01/11/2000 - Current Production (Daily) NOTE: The instrument covers were opened on 02/24/2000.

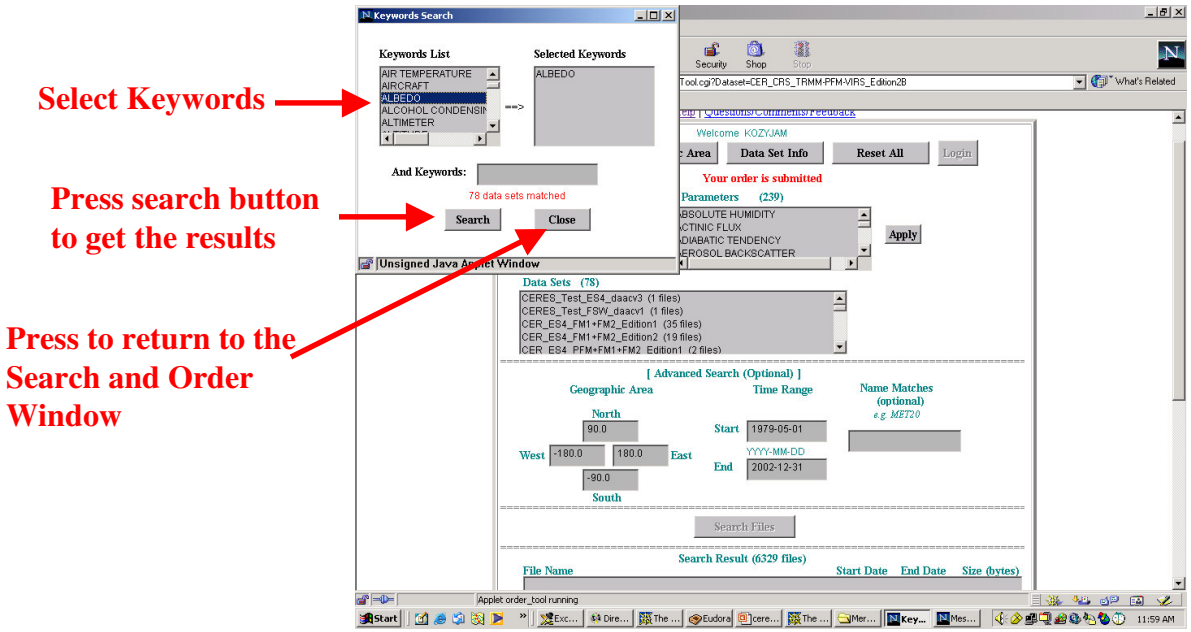
Langley Web Ordering Tool – Java Version

(http://eosweb.larc.nasa.gov/HBDOCS/Langley_web_tool.html)





Keyword Search



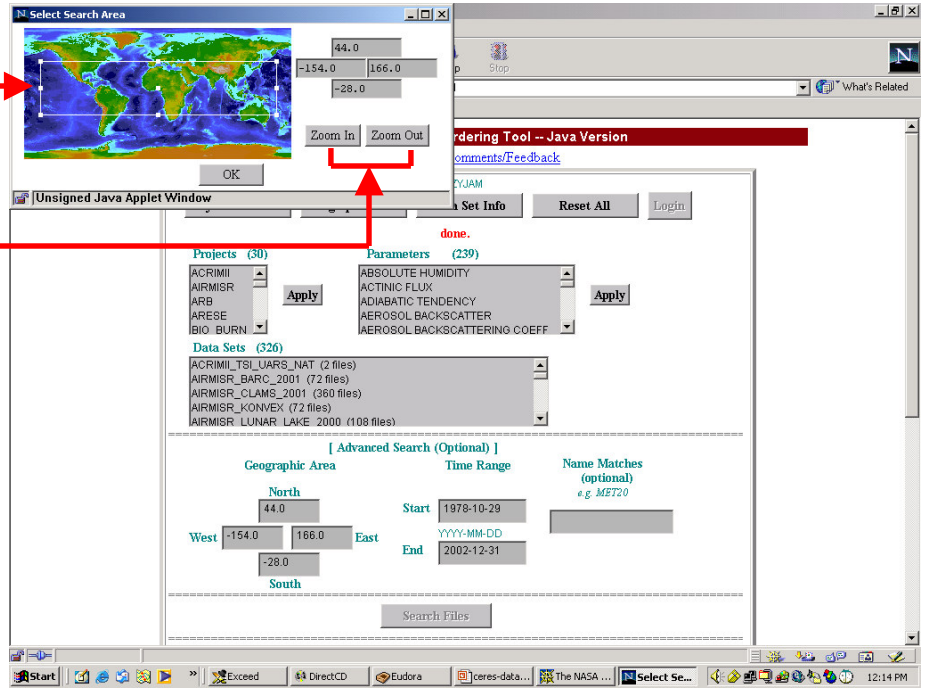
- List of all: sensors, source and parameter keywords
- Can choose multiple keywords (searches use the “AND” relation for all keywords)
- Can add additional keywords (user types them in)
- Used to restrict the amount of data returned

Then select Data Set and then Search Files Button

Geographical Area

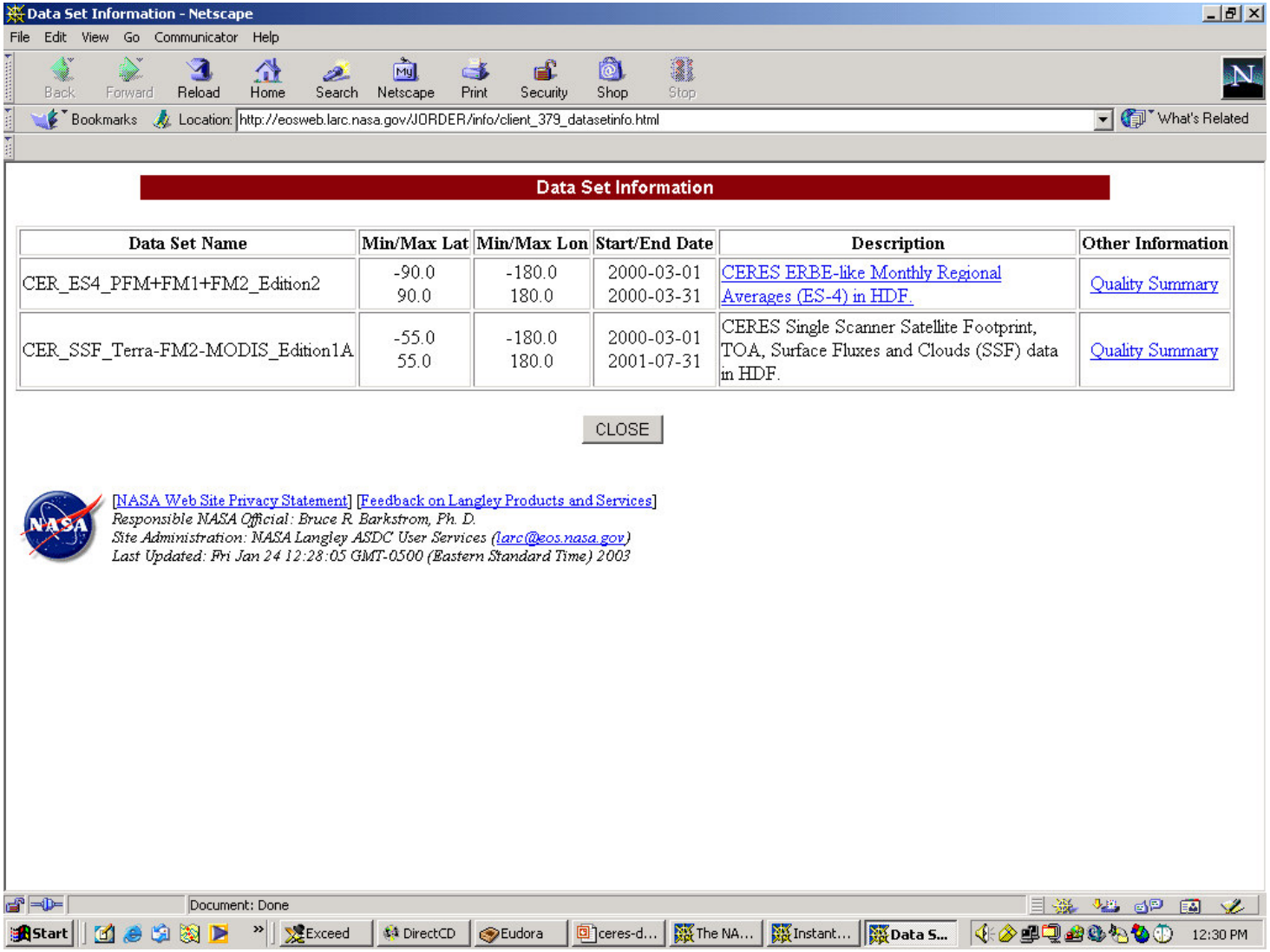
Define a search area: move the rectangular box until it encloses the area to be defined.

Increase/Decrease magnification

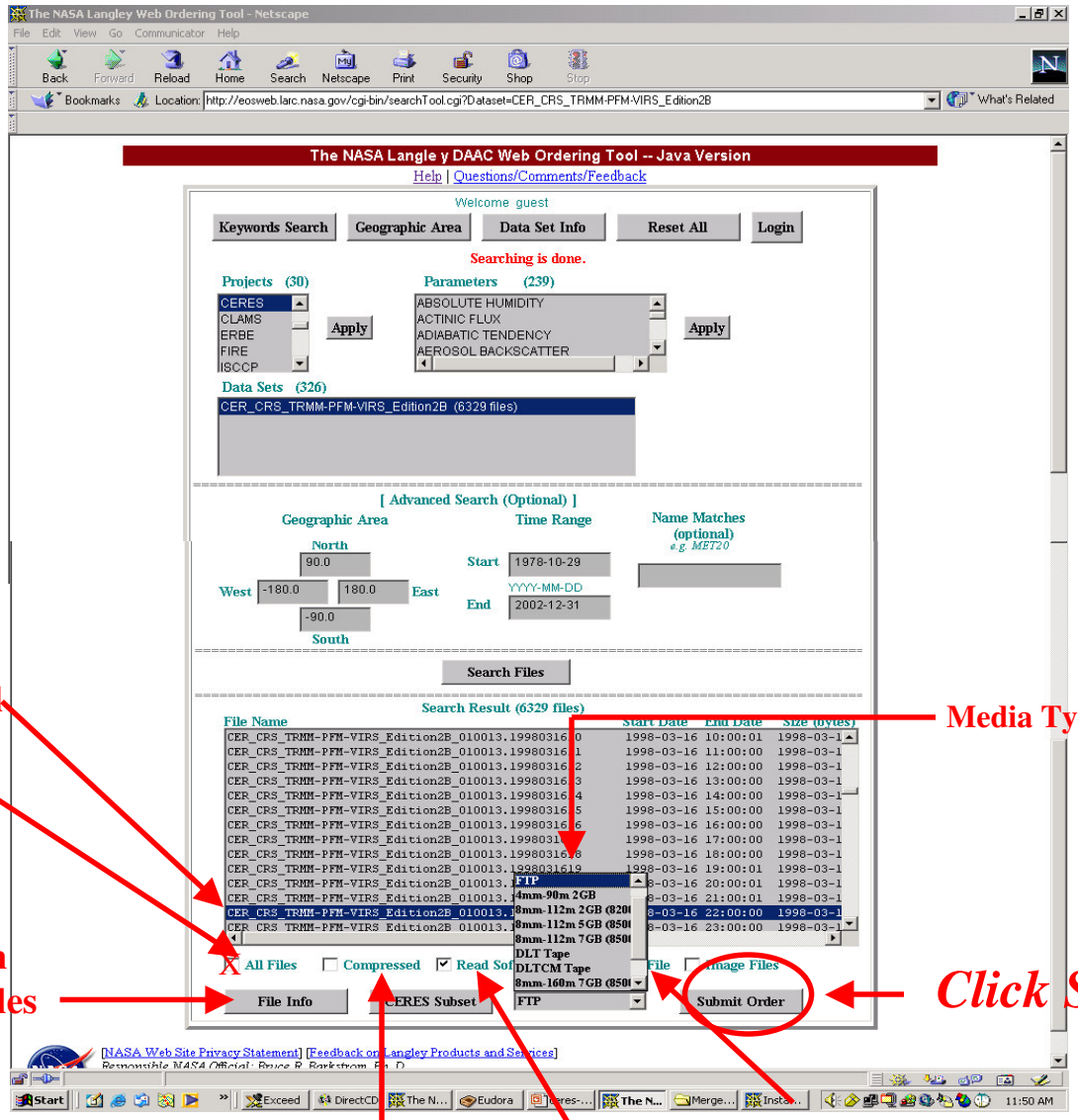


- Geographic coverage for a selected data set will be identified by the white rectangular box
- Geographic region (rectangular box) may be moved and/or resized
- Bounding latitude and longitude are also displayed in the Search and Order Window
- Zoom In (increase the magnification) and Zoom Out (decrease the magnification)
- Used to restrict the amount of data returned

Data Set Information



Ordering Data via Langley Web Ordering Tool



File Selection
- **Individual**
- **All Files**

File Information on previously selected files (table)

Media Type

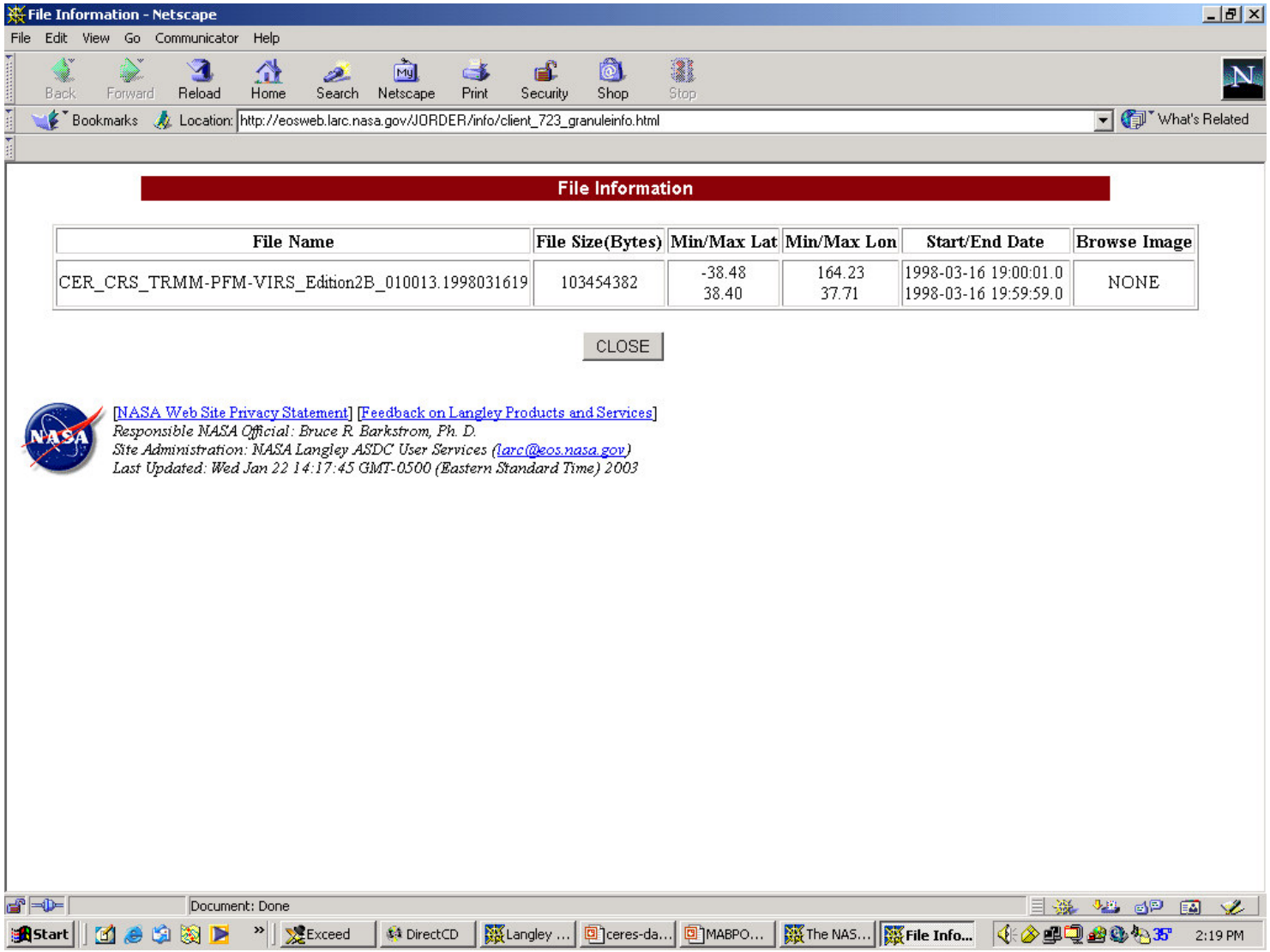
Click Submit to Order

UNIX Compressed

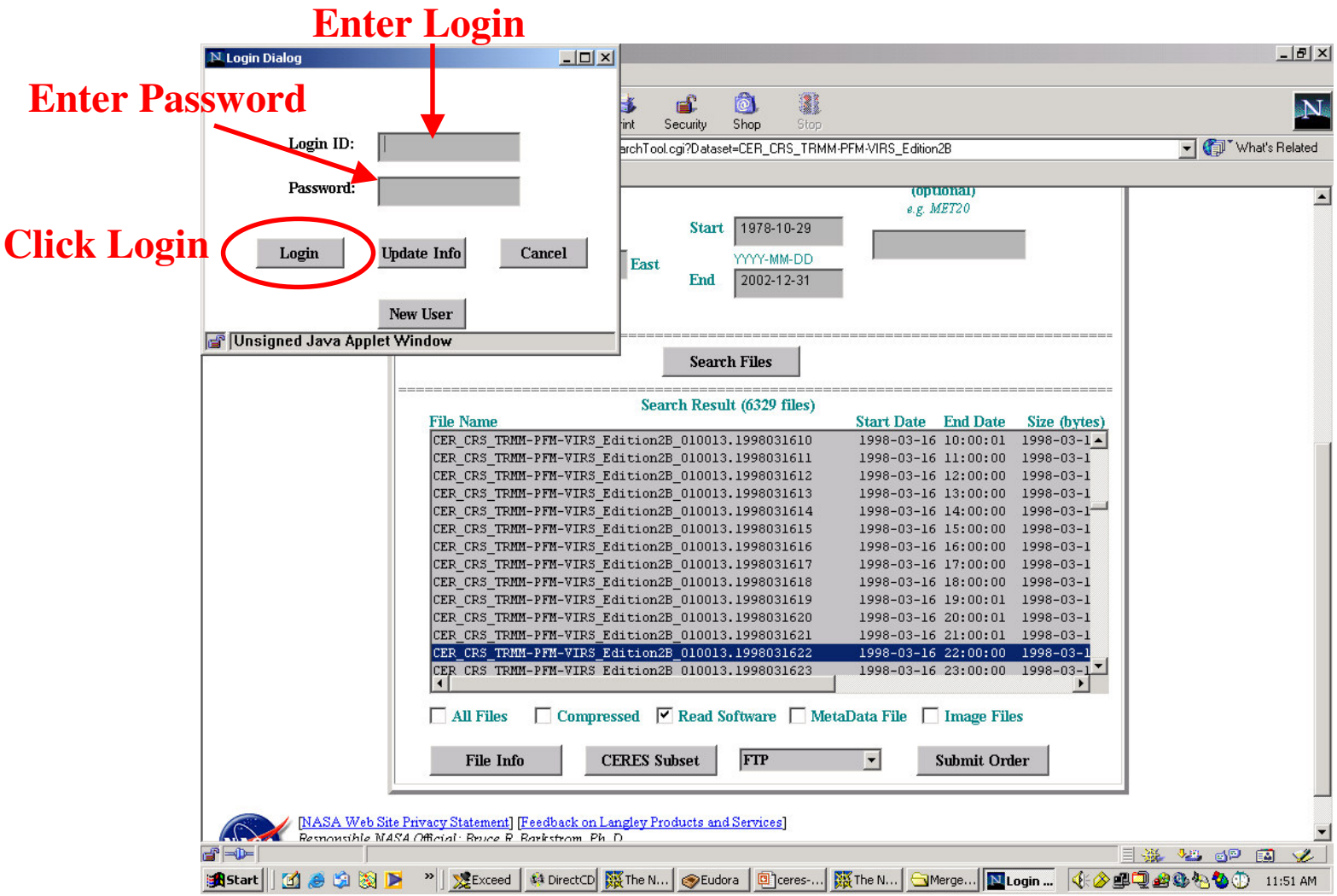
Include Read Package

Include metadata files

File Information

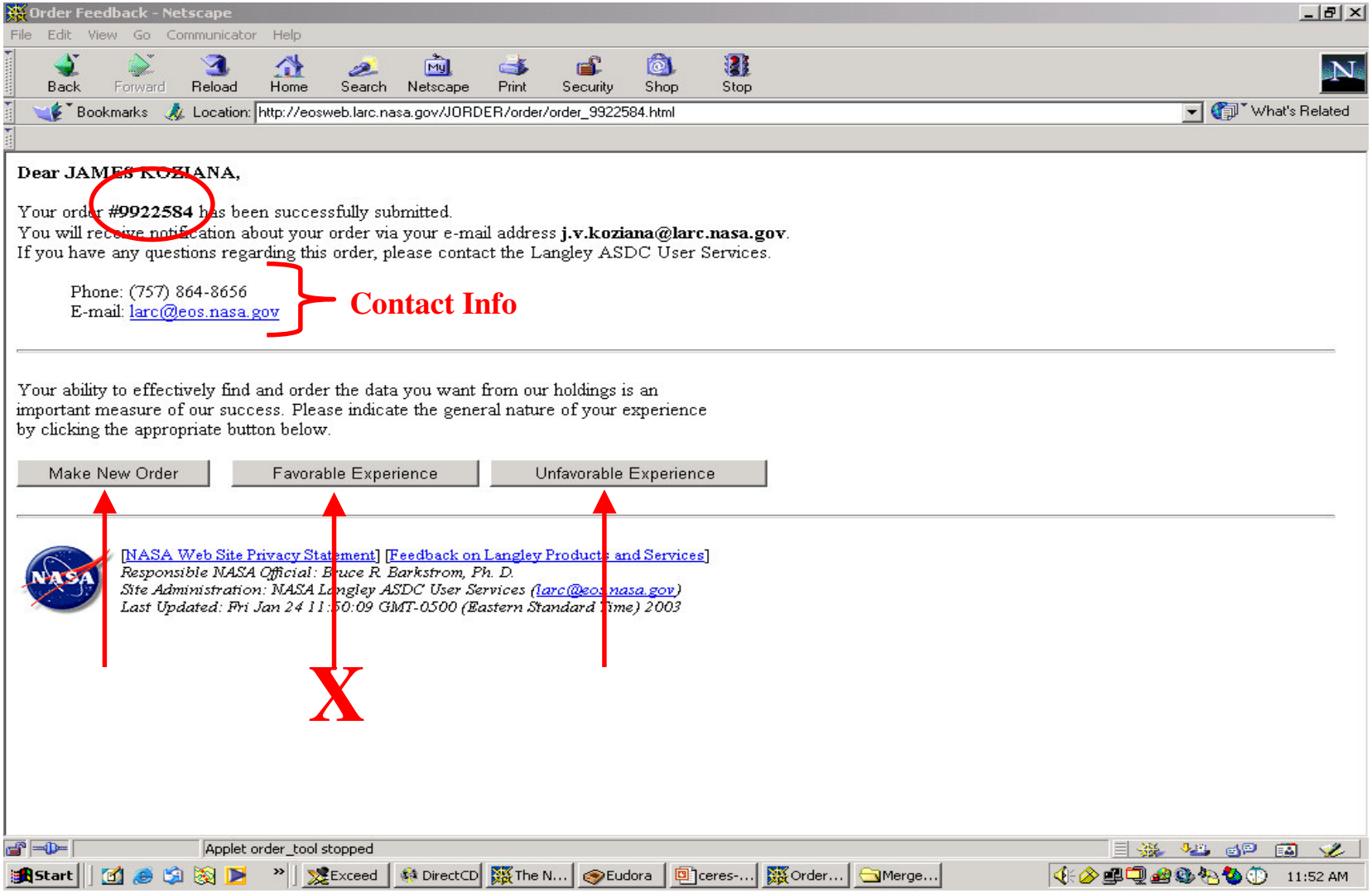


Login Dialog Window



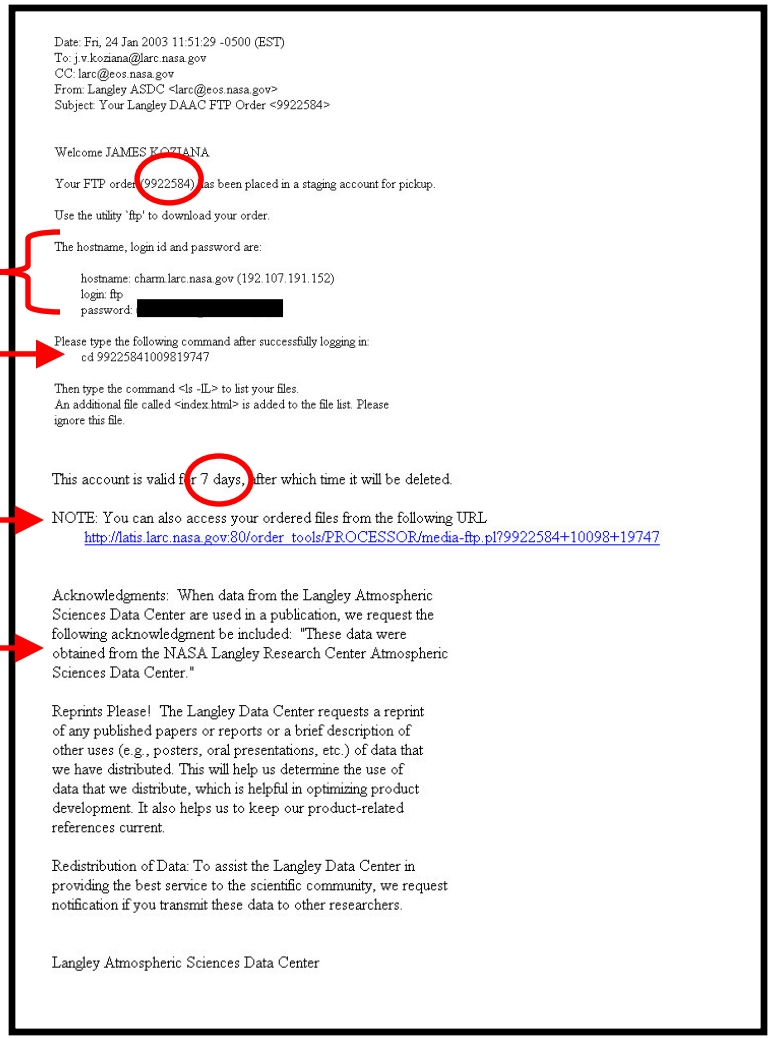
Order Information

Successfully Placed Order



Where is my Data ??

Email Notification



Date: Fri, 24 Jan 2003 11:51:29 -0500 (EST)
To: j.v.koziana@larc.nasa.gov
CC: larc@eos.nasa.gov
From: Langley ASDC <larc@eos.nasa.gov>
Subject: Your Langley DAAC FTP Order <9922584>

Welcome JAMES KOZIANA

Your FTP order (9922584) has been placed in a staging account for pickup.

Use the utility 'ftp' to download your order.

The hostname, login id and password are:

hostname: charm.larc.nasa.gov (192.107.191.152)
login: ftp
password: [redacted]

Please type the following command after successfully logging in:
cd 9922584100981974 7

Then type the command <ls -lL> to list your files.
An additional file called <index.html> is added to the file list. Please ignore this file.

This account is valid for 7 days, after which time it will be deleted.

NOTE: You can also access your ordered files from the following URL
http://latis.larc.nasa.gov:80/order_tools/PROCESSOR/media-ftp.pl?9922584+10098+19747

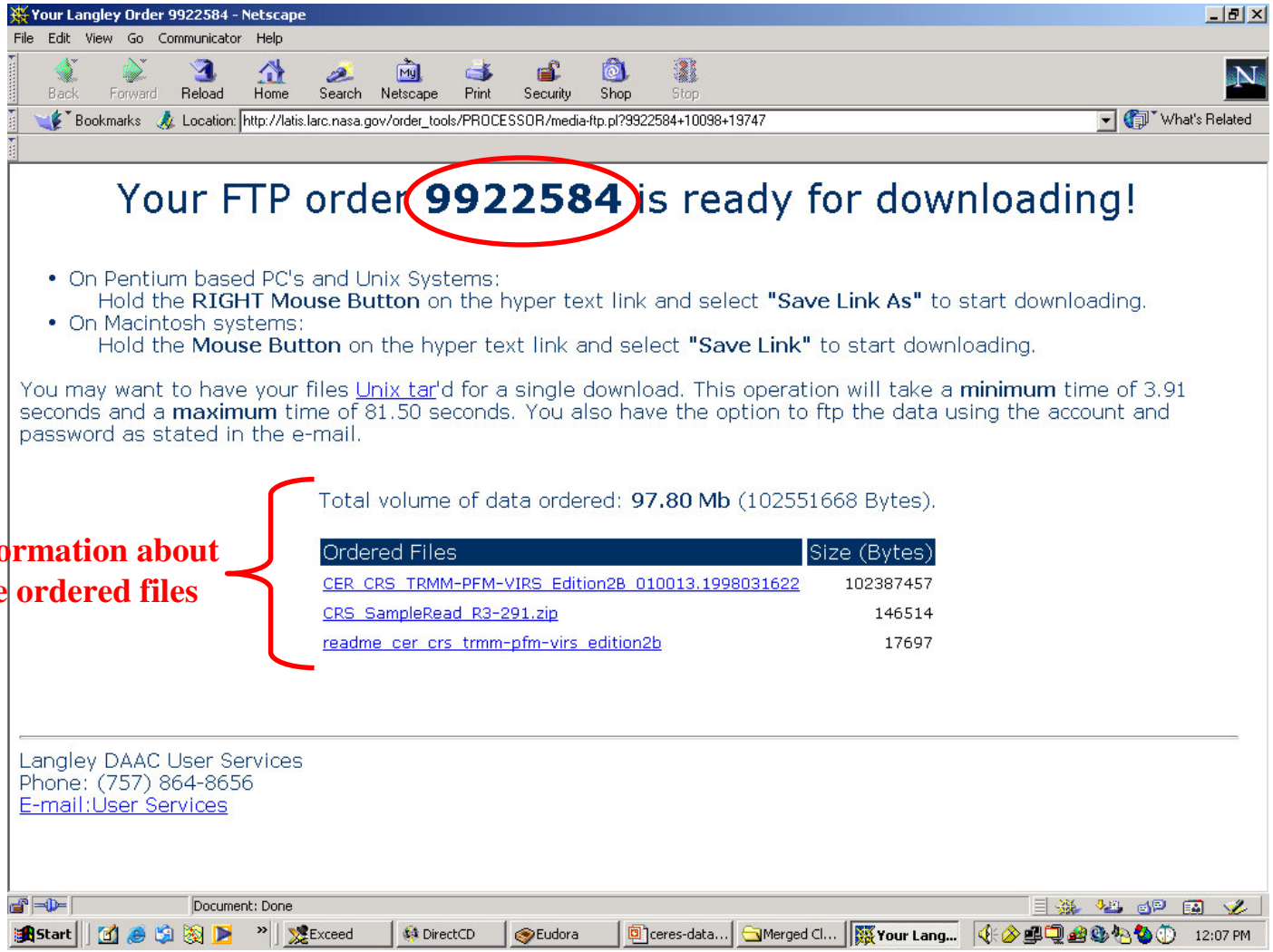
Acknowledgments: When data from the Langley Atmospheric Sciences Data Center are used in a publication, we request the following acknowledgment be included: "These data were obtained from the NASA Langley Research Center Atmospheric Sciences Data Center."

Reprints Please! The Langley Data Center requests a reprint of any published papers or reports or a brief description of other uses (e.g., posters, oral presentations, etc.) of data that we have distributed. This will help us determine the use of data that we distribute, which is helpful in optimizing product development. It also helps us to keep our product-related references current.

Redistribution of Data: To assist the Langley Data Center in providing the best service to the scientific community, we request notification if you transmit these data to other researchers.

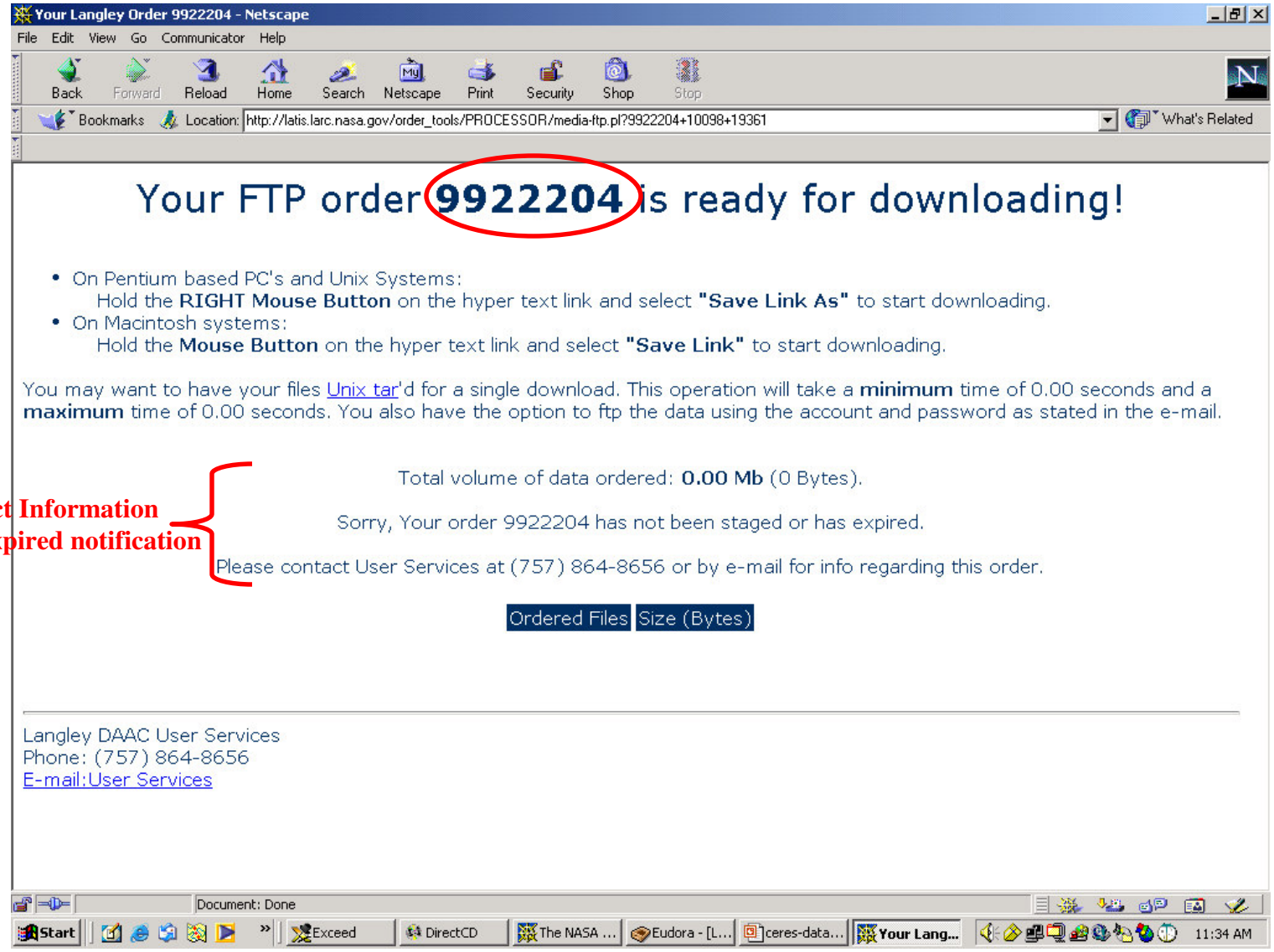
Langley Atmospheric Sciences Data Center

Html Access Page



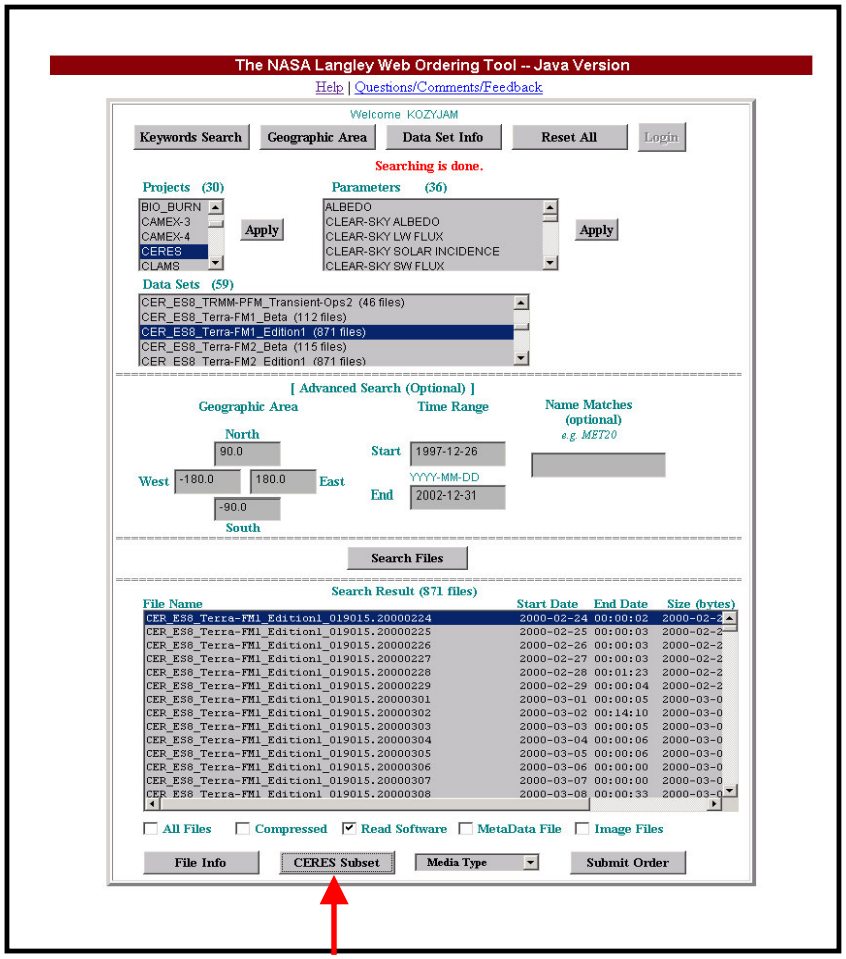
Information about The ordered files

Html Access Page
Expired

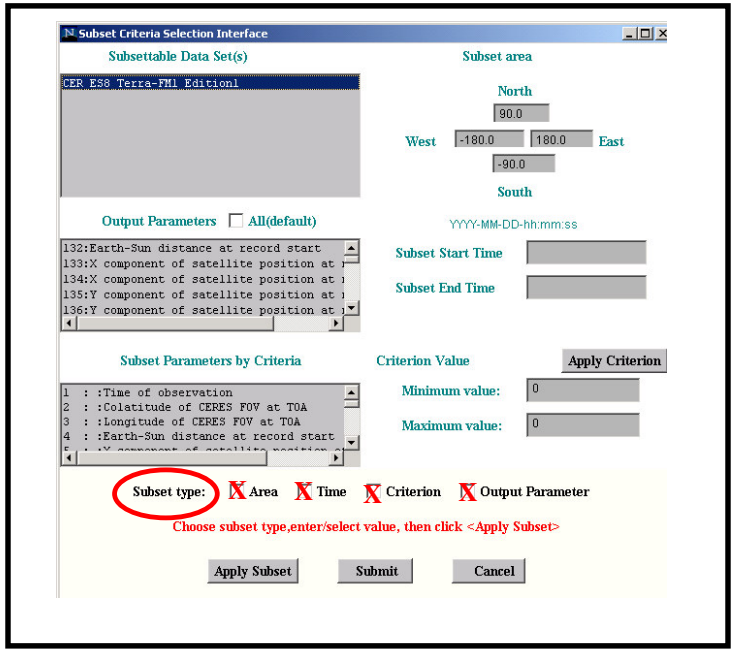


Contact Information
And expired notification

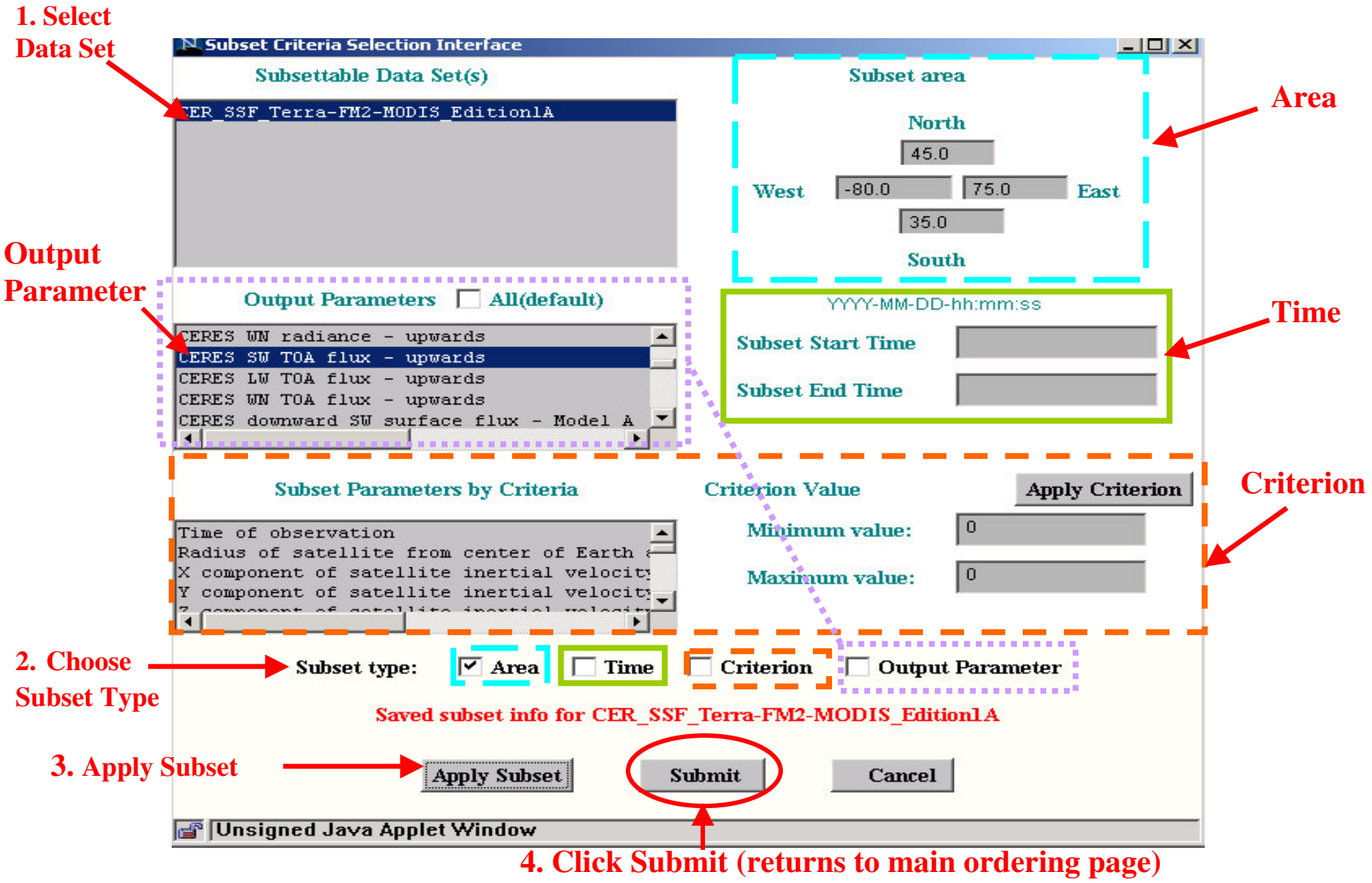
CERES Subset



- Available through the Langley Web Ordering Tool (Java)
- ***Products:*** ES-8, CRS and SSF
- ***Subset Type***: Area, Time, Parameter Criterion and Output Parameter

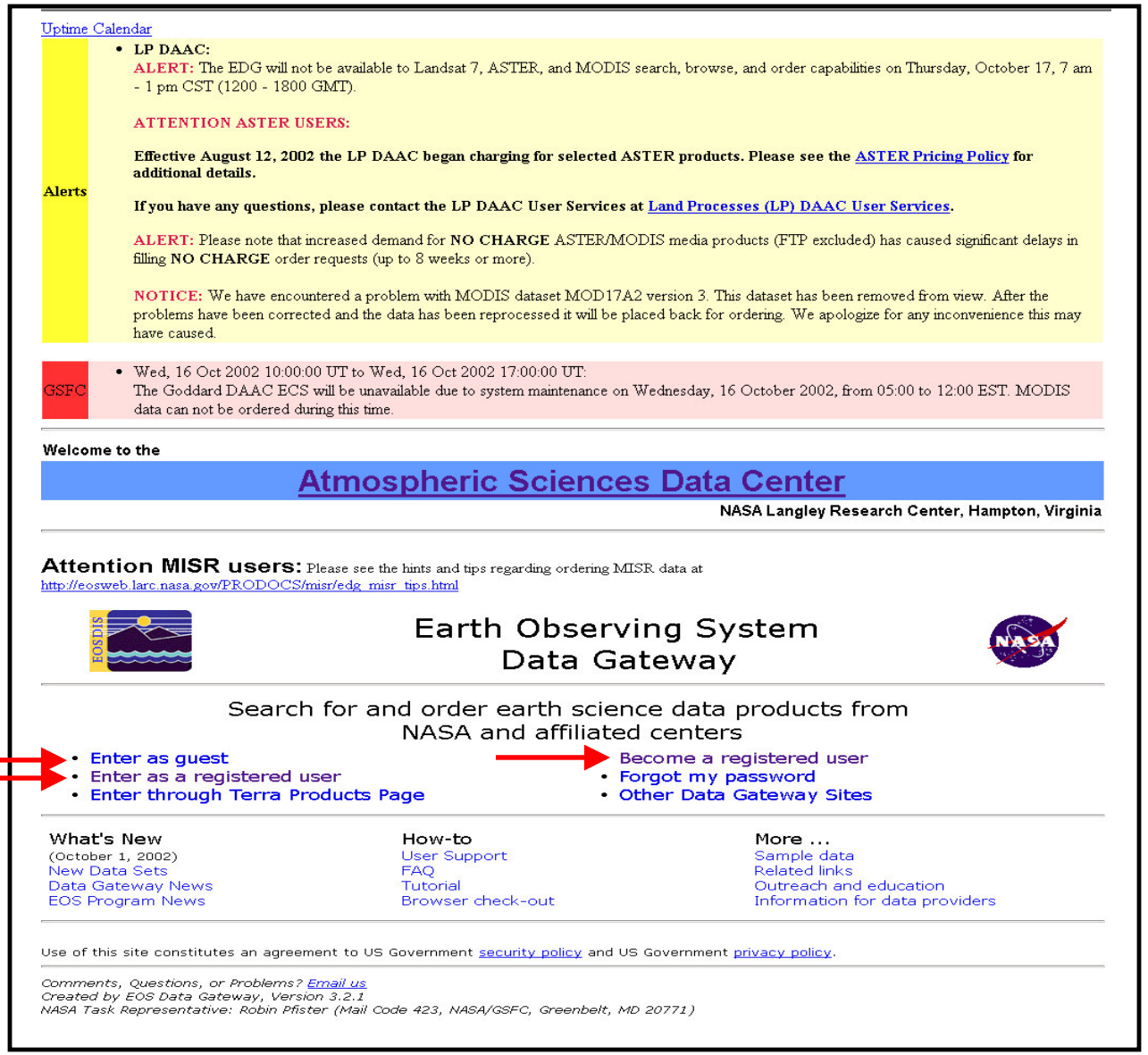


CERES Subset (Continued)



EOS Data Gateway (EDG)

(http://edg.larc.nasa.gov/~imswww/imswelcome/)



Uptime Calendar

Alerts

- **LP DAAC:**

ALERT: The EDG will not be available to Landsat 7, ASTER, and MODIS search, browse, and order capabilities on Thursday, October 17, 7 am - 1 pm CST (1200 - 1800 GMT).

ATTENTION ASTER USERS:

Effective August 12, 2002 the LP DAAC began charging for selected ASTER products. Please see the ASTER Pricing Policy for additional details.

If you have any questions, please contact the LP DAAC User Services at Land Processes (LP) DAAC User Services.

ALERT: Please note that increased demand for **NO CHARGE** ASTER/MODIS media products (FTP excluded) has caused significant delays in filling **NO CHARGE** order requests (up to 8 weeks or more).

NOTICE: We have encountered a problem with MODIS dataset MOD17A2 version 3. This dataset has been removed from view. After the problems have been corrected and the data has been reprocessed it will be placed back for ordering. We apologize for any inconvenience this may have caused.

GSFC

- Wed, 16 Oct 2002 10:00:00 UT to Wed, 16 Oct 2002 17:00:00 UT:
  The Goddard DAAC ECS will be unavailable due to system maintenance on Wednesday, 16 October 2002, from 05:00 to 12:00 EST. MODIS data can not be ordered during this time.

Welcome to the

Atmospheric Sciences Data Center

NASA Langley Research Center, Hampton, Virginia

Attention MISR users: Please see the hints and tips regarding ordering MISR data at
http://eosweb.larc.nasa.gov/PRODOCS/misr/edg_misr_tips.html

Earth Observing System Data Gateway

Search for and order earth science data products from NASA and affiliated centers

- Enter as guest
- Enter as a registered user
- Enter through Terra Products Page
- Become a registered user
- Forgot my password
- Other Data Gateway Sites

What's New
(October 1, 2002)
New Data Sets
Data Gateway News
EOS Program News

How-to
User Support
FAQ
Tutorial
Browser check-out

More ...
Sample data
Related links
Outreach and education
Information for data providers

Use of this site constitutes an agreement to US Government security policy and US Government privacy policy.

Comments, Questions, or Problems? Email us
Created by EOS Data Gateway, Version 3.2.1
NASA Task Representative: Robin Pfister (Mail Code 423, NASA/GSFC, Greenbelt, MD 20771)

Use of Data from the Langley Data Center

Acknowledgments:

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Please contact us at larc@eos.nasa.gov for instructions on mailing reprints.

Redistribution of Data:

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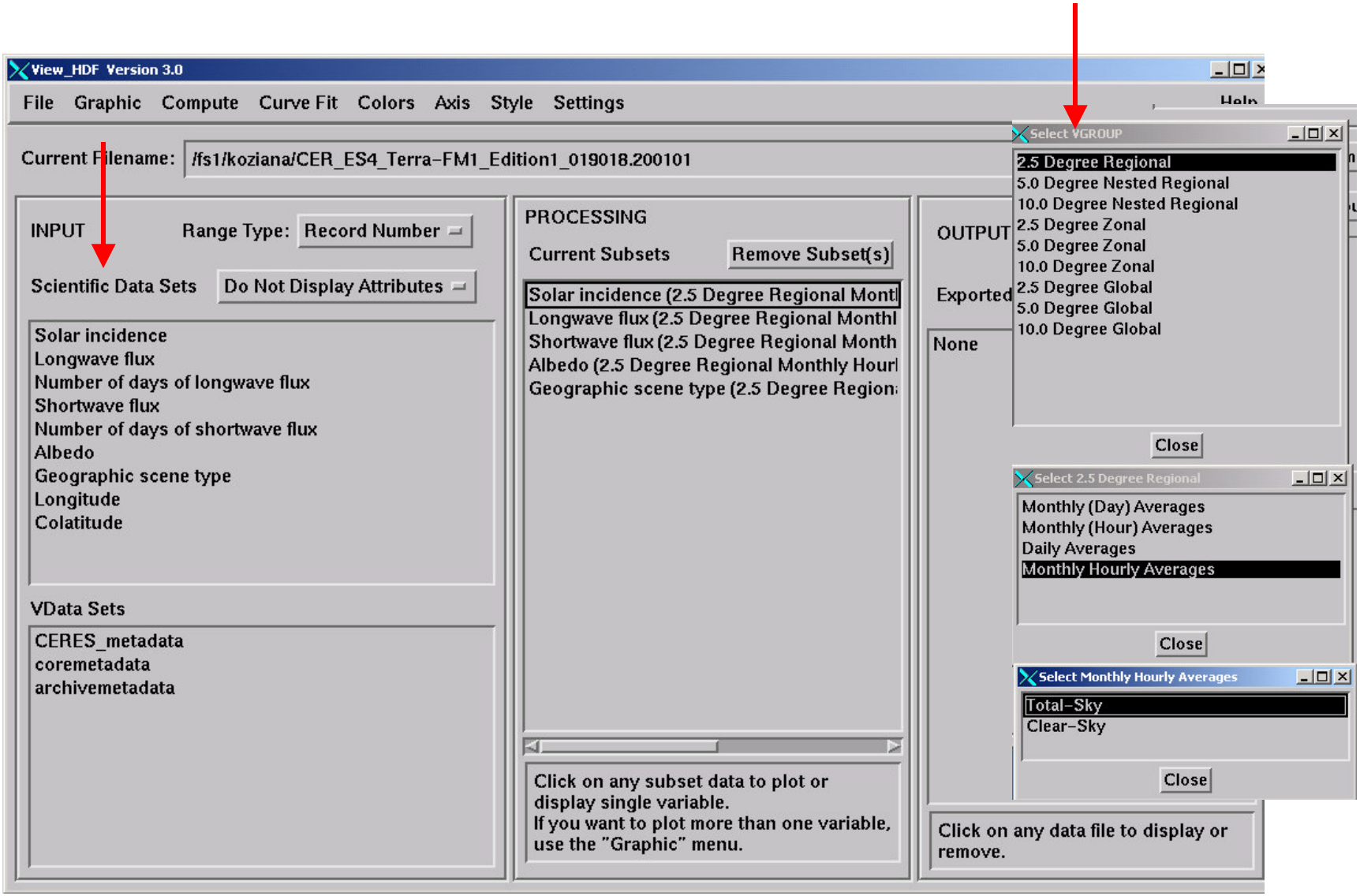
view-hdf: Visualization and Analysis Tool

- Visualization and Analysis Tool for CERES Data Files (HDF)
- ***Purpose:*** To Generate Science Data Products from Instrument Measurements
- Written in Interactive Data Language (IDL)
- **Capabilities:**
    - Select and subset variables from either Science Data Sets (SDS) or Vdata structures
    - Render both two and three dimensional graphics
    - Plots gelocated CERES data onto various world map projections
    - Exports data to a file in ASCII or HDF format
    - Portable to platforms supporting IDL, HDF libraries and a C compiler
- Developed by the CERES Data Management Team and Distributed free of charge by ASDC.

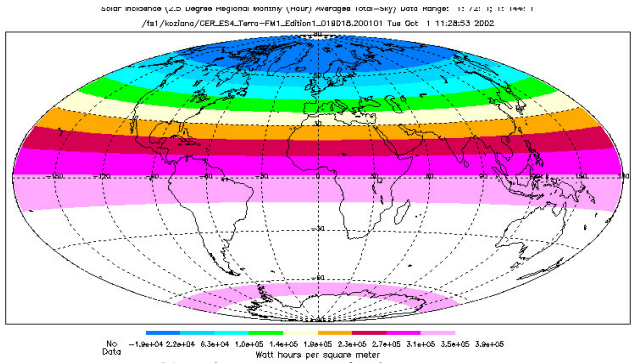
http://eosweb.larc.nasa.gov/HPDOCS/view_hdf.html

View_hdf

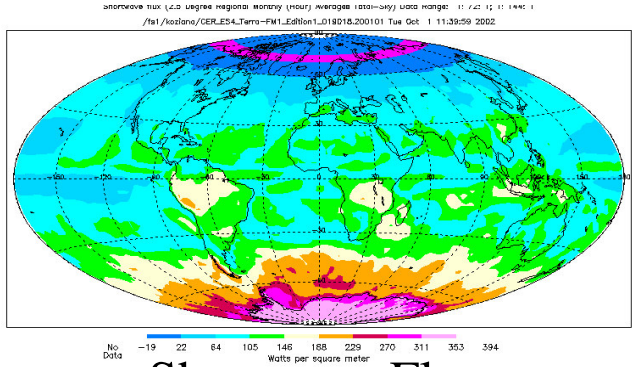

View_HDF Version 3.0
File Graphic Compute Curve Fit Colors Axis Style Settings
Current Filename: /fs1/koziana/CER_ES4_Terra-FM1_Edition1_019018.200101
INPUT
Range Type: Record Number
Scientific Data Sets
Do Not Display Attributes
Solar incidence
Longwave flux
Number of days of longwave flux
Shortwave flux
Number of days of shortwave flux
Albedo
Geographic scene type
Longitude
Colatitude
VData Sets
CERES_metadata
coremetadata
archivemetadata
PROCESSING
Current Subsets
Remove Subset(s)
Solar incidence (2.5 Degree Regional Monthl
Longwave flux (2.5 Degree Regional Monthl
Shortwave flux (2.5 Degree Regional Month
Albedo (2.5 Degree Regional Monthly Hourl
Geographic scene type (2.5 Degree Region
Click on any subset data to plot or display single variable.
If you want to plot more than one variable, use the "Graphic" menu.
OUTPUT
Exported
None
Click on any data file to display or remove.
Select VGROUP
2.5 Degree Regional
5.0 Degree Nested Regional
10.0 Degree Nested Regional
2.5 Degree Zonal
5.0 Degree Zonal
10.0 Degree Zonal
2.5 Degree Global
5.0 Degree Global
10.0 Degree Global
Close
Select 2.5 Degree Regional
Monthly (Day) Averages
Monthly (Hour) Averages
Daily Averages
Monthly Hourly Averages
Close
Select Monthly Hourly Averages
Total-Sky
Clear-Sky
Close

2.5 Degree Regional Monthly Hourly Averages (Total Sky)

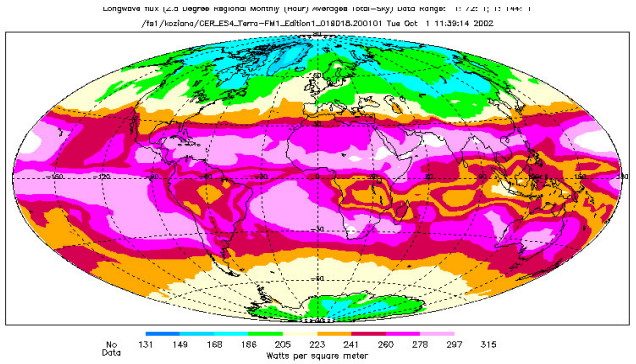
(CER-ES4-FM1_Edition1_019018.200101)



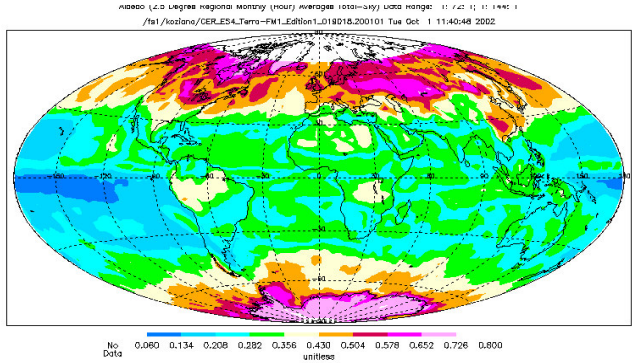
Solar Incidence



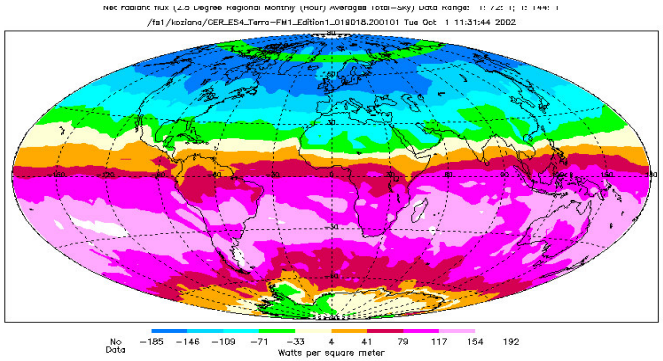
Shortwave Flux



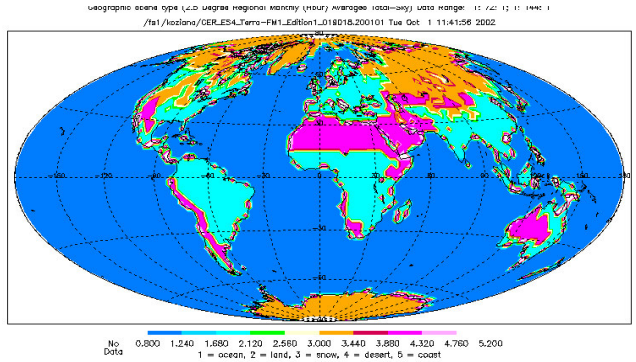
Longwave Flux



Albedo



Net Radiance Flux

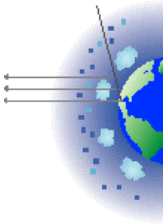


Geographic Scene Type

Now What?

User Services: larc@eos.nasa.gov

Web site: http://eosweb.larc.nasa.gov



- Atmospheric
- Sciences
- Data Center

Processing, archiving, and distributing Earth Science data at the NASA Langley Research Center

Tire Kicking Session

- 2:00 PM today
- User Services personnel
- Computers for hands on experience
  - Search and Order
  - CERES Subsetting
  - view-hdf
- Demonstrations
- Questions